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PAINTING PHOTOGRAPHS IN WATER
COLORS.

IF painting photographs is not high art it is, at least, an occupation which no one should attempt without a skilful hand and a good practical knowledge of color. The hand must have been trained to be equal to whatever demands may be made upon it—not only in applying color, but in restoring drawing. The camera has done its perfect work, but see how quickly and irretrievably you will undo it if you begin to color over it without the ability to follow unswervingly every line and shade of the duplicate photograph. The difficulties in this respect are not quite so great when using water-colors as with oils. The legitimate painting of photographs in water-colors has recently been superseded to such an extent by the new patent processes that we seldom see one of those exquisitely stippled pictures that used to challenge comparison with fine original work. Such results can be achieved only by those who are skilled in the use of transparent water-colors. Any one can quickly learn to lay on flat washes of color and coarse lines of shade, but a good photograph should never be spoiled by such work. Get your practice on other things, and not until you have acquired perfect control over your colors, should you attempt to apply them to the photograph.

The picture that you are to paint must be good in the ordinary sense, with an effective distribution of light and shade. Select a light impression, for pure warm color wants no inky shadows under it. Yet the impression must not be so light that the half-tones are lost. A somewhat darker impression is needed for a duplicate copy to be kept before you—just at the left—for constant reference. There should be but little shade in the background of the picture, for upon dark shade you can only produce certain effects, where without it, you are free to produce what you will.

The slightly albumenized paper which is now used for photographs does not need any of the preparations that are sold "to make the surface receive the color."

First wet the photograph, background and all, evenly over with clear water, using a large sable brush in the same manner that you would use it if charged with color for a wash—just as carefully, for you do not want to soak one part and slight another. If the surface has taken the water at all as an oily surface would, prepare a little thin gum-arabic water—so thin that it will pour like clear water—and stir one drop of ox-gall in each tablespoonful to be used with the colors. Working on the perfectly smooth surface of photographs is very different from working on rough water-color paper, and the colors must be in a faultless condition. The pans of moist color, if they are not used out rapidly, but left to dry and crack after being wet, become much deteriorated. If these colors are used, a little should be taken out with the point of a knife and wet upon a palette, instead of being taken off with a wet brush as for ordinary painting. It is better to use Winsor & Newton's hard cakes, and rub them off from time to time, as they are wanted. Never dip the cake in water, but have just enough water on the palette to facilitate the rubbing off. If the mixture of gum-water and ox-gall is to be used it may be added afterward.

First, a very thin wash of red lead is to be passed over all the flesh—this must be just sufficient to give a warm, flesh-like tone, without really seeming to color. When the wash is dry, it may be repeated where local color is wanted. (Red lead is not made in moist colors; the nearest equivalent to it is a mixture of Naples yellow and pink madder.) Now mix cobalt and Naples yellow in such proportions as to give a greenish, rather than a bluish, tint, and, with this, work in all the half-tones very delicately by means of stippling or hatching, whichever touch you are most skilful with. In either case, make the work suit the modelling of the surface, not only as to direction and curve, but where there is any foreshortening, crowd the touches up smaller, and where there is none make them free and open. If the brush ever leaves an unfortunate trace, apply a corner or edge of a piece of blotting-paper. Texture, gradation, the rounding of surfaces, all depend greatly upon the judicious treatment of half-tones.

Now lay in the warmest tints required with rose madder. These will be as follows: the line between the lips, the nostrils, the inner corners of the eyes, the concave portions of the ears, and, if the hands are seen, between the fingers, and where there is any glimpse of the inside of a hand.

Next, begin on the darkest shadows with Vandyck

brown, and as you approach the half-tones already worked in, use Indian yellow and Indian red mixed in such proportions that they will shade from the Vandyck brown into a lighter tint.

Touch the lower lip with red lead and rose madder, and the upper lip with the light shade tint made of Indian red and Indian yellow.

Whatever may be the color of the eyes do not make it too decided. Cobalt may be modified with Naples yellow for light blue eyes and with sepia for dark. Raw Sienna and Vandyck brown make a good hazel, and a little Vandyck brown should be used in the blackest eyes; sepia is usually strong enough to combine with it, without any black. The pupil wants sepia alone or sepia and black. Let the high lights be spared and afterward touched with Chinese white if they are to be sharp. A little neutral shade is needed on the white of the eyes. Be careful not to make hard lines for the eyebrows or lashes. The latter are usually somewhat darker than the former. Both, if belonging to adults, correspond nearly with the hair. Children's lashes are usually darker than their hair.

The local color of the hair is not likely to be mistaken. Try the color that seems to be indicated, on a piece of common paper, and it will be very easy to decide if it is right. The lights, shadows, and half-tones are more difficult. The neutral tint of the latter is greenish if there is much yellow in the hair, purplish if there is much warm brown or red, and bluish if the hair is black. Make the darkest shadows as warm as the local color will allow, and slightly cool the edges. The lights on black hair must be very cold. Wherever the hair is brought on the face use neutral tint freely to insure softness of outline. Keep the hair well massed and free from hardness. When the photograph gives a good light on the hair, always depend upon sparing it and modifying it with suitable tint rather than upon using Chinese white.

Color drapery effectively, but not crudely. Use transparent washes that will preserve every fold and every shade that the camera has given. Lay each portion on with a tolerably full brush, bringing it just as far as it ought to come, and no farther. Keep shadows warm, merely cooling the edges. For instance, the shadows in blue drapery tend somewhat toward purple or even brown, which means that they borrow warmth from red. On the same principle, the shadows on yellow want raw Sienna and warm sepia, and those on orange, burnt Sienna and rose madder. Scarlet and crimson drapery want the richest browns and purple in the deep shadows. The most brilliant portions of scarlet should first be washed with cadmium and then with vermilion.

On silk and satin, the effects must be transparent and brilliant, on velvet, soft and broad, on cloth, soft and more opaque. A little Chinese white may be used in the local color for cloth, to give it more body. In treating any black fabrics, do not depend too much upon black, warm the shadows with sepia and crimson lake and cool the half-tints and the lights with indigo.

White drapery should have cobalt and Indian red on the medium shades, and sepia on the deepest shades. It is often necessary to give more shade to white than you find on the photograph, and the half-tones should be brought well up to the lights.

The background must, of course, depend upon the style of the picture. A clouded background usually looks well for any picture that is not full length, whatever the size may be. Neutral shades alone may be used, or, if the subject be fair, light cobalt and violet may be forced in. For very dark subjects olive tints are good, with lake and sepia introduced toward the lower part of the picture. After using the washes desired a fine finish may be given with broad hatching. A red sable brush somewhat worn at the point will give the broken atmosphere effect that is wanted.

H. S. SAKING.

THE school for workers in bronze founded by Barbiedienne in 1868, and closed in 1870, has been re-opened under the direction of M. Eugène Robert. It is time. The art of casting and that of chasing is going rapidly down-hill in France. But it is remarked with truth that it were better find buyers before making new producers, and the remark applies to our own efforts in the same direction. To make an enlightened amateur or collector is to do more for art than to found a school.

It is well for students to know that the pigment called "Antwerp brown" is the same as asphaltum or bitumen, the destructive character of which has often been pointed out in these columns.

Art Notes and Hints.

[Selected from Madame Cavé's "Drawing from Memory."—G. P. Putnam's Sons.]

Drawing from memory is to have one's thought, the expression of that thought, at the point of his pencil, as the writer has his at the tip of his pen.

* * *

IT is a general rule that in drawing an entire figure or a cast, the distance of the delineator from the model should be three times its height. Thus, if the model, seated or standing, is four feet in height, the delineator should place himself twelve feet distant.

* * *

AS soon as you see correctly you feel correctly, you execute correctly.

* * *

THE crayon is more difficult to handle than the charcoal; drawings retouched by the crayon lose much of their merit when the pupil does not understand using the crayon with suppleness and without heaviness. It is not by bearing on that black is produced, but by passing over and over the same place, and always very lightly. In this way mellowness is obtained and dryness avoided. The pupils should hold the crayon inclined, not perpendicularly, as in writing. They should not press it between the fingers.

* * *

IT is highly important to study the hand from the cast, since the position in nature is generally bad. Very few persons place their hands naturally with a correct and supple movement. The hand is easily benumbed, and becomes stiff. One may easily procure hands moulded after nature.

* * *

ACCUSTOM yourself to notice the effects of the light: How figures are illumined; why shadows exist. Without thus studying nature, you will always make poor copies from models. Learn what a projected shadow is. One object casts a shadow upon another; the rim of a hat upon the face, a ruffle upon the hand, a piece of furniture upon the floor, etc.; and we ourselves have our projected shadow which follows us everywhere.

* * *

THE light is always excessively sharp upon the hair, because it is glossy, and upon a round body. Well rendered it gives form to the head. Satin goods receive also a very sharp light. It is broader upon silk, and still more so upon woollens, cotton and linen. In drawing stuffs, we have the shadow, the mezzotint, the light, and the reflection.

* * *

GENERALLY upon polished surfaces, such as crystals, marbles, porcelains, metals, varnished woods, gildings, etc., the lights are very rare and sharp. It is important to know this, for the light indicates the material and the quality. Thus, in a drawing, a new piece of furniture differs from an old through the manner of disposing the lights.

* * *

ALWAYS seek the beautiful in painting faces, and whatever deformities they possess will become far less prominent, or will even disappear. Study the character of a head; try to discover what strikes us at first sight. There are persons who possess this faculty naturally, and they take likenesses before they know how to draw. I call that a good likeness which pleases our friends, leaving no room for our enemies to say, "It flatters!" And this is no easy achievement. How many good portrait-painters are there—that is, painters who combine real talent with the art of producing a good likeness?

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IN introducing figures in a landscape, by drawing a line from the point of view to the feet of the figure in the foreground, and another line from the same point to the head of the same figure, one may determine the proportions of all the figures between these two lines.

* * *

IN portraiture observe the greatest precision in the contour of the head, in the manner in which it is placed upon the shoulders, and in its relation to the rest of the body. This is the first rule for the painter—the most important. It is so true that in the darkness you recognize by his profile a person who enters your house. You distinguish him even by his back. Afterward the line of

Amateur Photography.

CONDUCTED BY GEORGE G. ROCKWOOD.

TONING AND FIXING.

the hair and the position of the features should be indicated without immediately attempting to express them. In order that the portrait shall not bring into prominence the imperfections of the face, they should, in the first place, be well understood. If the nose is too short and too far from the mouth, you lengthen it a little without touching the mouth, and the two defects are softened. If, on the contrary, the nose is too long, you shorten it a little, always without touching the mouth, in order not to alter the division and contour of the face. It is highly necessary to avoid this, for we seldom fail to notice whether our acquaintances have long or round faces. But you may enlarge the eye a little, and still preserve its form; contract the mouth somewhat through the expression given to it, or, rather, by that one of its expressions which you adopt.

* * *

THE picture should excel the sketch only in the superiority of the details. Into the sketch the painter throws his spirit, his soul, and his heart. Into the picture he puts all his knowledge, his patient and devoted work, that is to say, his firm resolve to submit to his sketch. The sketch is made *con amore*; the picture, with that calmer and more lasting sentiment which I shall call friendship. The sketch is the work of a day or an hour; the picture is the work of a year or of several months. Do you appreciate all the force of will that is needed to execute in a year what has been conceived in a day? A great artist has said: "Years are needed before succeeding in putting into one's picture all that there is in one's sketch."

* * *

How many artists are like goats, which, when fastened by a cord to a stake, begin at once, even at the risk of strangling, to browse upon whatever is remote and difficult to obtain! It is wiser to begin with that within our reach, with the most simple, the easiest. This germ, simplicity, creates style, and style comes like everything else in nature, unconsciously. One little grain in the mind, and it is all there.

* * *

In a good picture there is a reason for everything, nothing is introduced by chance. The most unobserved object, that which seems most insignificant to the spectator, is sometimes so necessary that, if it were taken away, the picture would in great measure lose its effect, nor even would the composition be well balanced; for often a book, a handkerchief, a basket, thrown down as by chance, balances a person, or even an entire composition.

* * *

I ONCE heard a painter say: "I am about painting a very original picture. I have an entirely new subject." What an error! It is the talent which must be original, not the object represented. An original talent is one which resembles no other talent. It may execute the most commonplace compositions, but it will always be original. It is the manner of first beholding and afterward executing, which is peculiar to you. Can anything be more trite than a cavalier with his horse? Yet, executed by a great artist, this would be a very original subject.

* * *

LET the beginner be taught the first principles of beauty in the human face; that between the two eyes, for instance, there is a space equal to the size of the eye; eyes too widely separated give an unintelligent air; the eyes of cattle are placed thus; in monkeys, on the contrary, they are too near; that the lower part of the ear should be on a level with the lower part of the nose, but placed higher it may still be beautiful; that there should be the same distance between the hair and the eyes, as between the eyes and the lower part of the nose, between the lower part of the nose and the chin; that the mouth should be near the nose.

* * *

AFTER all the subject is of so little importance to posterity, that artists, genuine amateurs, never trouble themselves about it. The action is given well or badly, the sentiment expressed well or badly, the picture is fine or it is ugly. A painter is not an historian; we have books for our instruction. A beautiful picture is like a beautiful woman; we do not ask her name or her address in order to determine whether she is beautiful.

THE first thing to do is to soak the print in a dish of clear water for a few minutes, and thus wash off the free nitrate of silver remaining upon the surface of the paper. A half hour's soaking, with one or two changes of the water, will effect this, and the print will then be ready for toning.

Chloride of gold, the most important ingredient of the toning bath, is sold in bottles containing fifteen grains. Dissolve this in thirty drachms of water, add a drop of hydrochloric acid, and preserve the mixture as a stock solution in a bottle; mark it "gold solution." Make in another bottle a saturated solution of washing soda, also as a stock solution; mark it as such: "soda solution." When the prints have been washed, as before described, and are ready for toning, mix one drachm of the gold solution with one ounce of water. Pour it into a tray, and drop in a small piece of blue litmus paper, which will become red. Render the bath alkaline by adding from the soda solution, drop by drop, until the paper begins to change to blue again. It is better to prepare the toning bath during the day, while the printing is being done, as the bath then seems to work with more smoothness and uniformity. It may be used as soon as mixed.

The print is now taken by two corners and immersed in the gold or toning bath. At first the print will begin to bleach, and turn a warm red color, which soon changes into a beautiful warm black. Put in the prints one by one, keeping them separated or constantly in gentle motion. When a deep purple or warm black is obtained, remove them to a basin of clean water, and rinse them until all are toned, when they will be ready for immersion in the fixing bath, which is to render them permanent. The greatest care should be exercised in not permitting the slightest trace of the fixing bath, or hyposulphite of soda, to reach the toning bath or the prints until they have been immersed in the fixing bath. Such contamination causes yellow, dark stains, which cannot be removed. Therefore one who is toning but a few prints can tone with the left hand, and, passing the prints to the other, the right hand can immerse the prints in the fixing bath. But this is dangerously near, as one solution may be spattered into the other. The shortest distance between the two solutions in my establishment is certainly ten feet.

The fixing bath is made of six ounces of water and one of hyposulphite of soda. This solution removes from the paper all of the chloride of silver that has not been acted upon by the light, but does not injure the picture. The usual time for leaving the print in this bath is about fifteen minutes. If the print is held up to transmitted light before it is placed in the solution, it will appear quite opaque and cloudy in what should be the clear parts of the picture. After it has been in the bath the proper time this will disappear, and the print will have a clear, translucent effect. It should now be washed in two or three changes of water, and left to soak in a dish of water all night. In the morning it can be hung up to dry, and then mounted. If haste is necessary, the print,

after coming from the fixing bath, can be rinsed in water and passed through a common clothes-wringer a few times, after each time being dipped in clean water. It will then be perfectly washed. When quite dry, it may be mounted on card or bristol board, the best paste for this purpose being common laundry starch.

When directions are given to prepare and keep the sensitive paper in a dark room, it will, of course, be understood that daylight only is to be excluded; gas or candle light are permissible. A window closely covered with yellow paper completely filters the light of all actinic or chemical power, and consequently will do no harm. After the final process or fixing, take the greatest care that the prints do not again come into contact with the hyposulphite of soda. Soda is indispensable in its way, but exceedingly harmful out of place. So be careful to keep all the dishes and your fingers free from it. In all of the manipulations observe the most perfect neatness. Handle the prints with the tips of your fingers, and always with deliberation and care. If the silver solution grows weak by use—a mealy look to the prints indicates it—add a few grains of nitrate of silver. If by use it turns a dark wine-color, and the paper is not white when dry, set the solution in clear sunlight for a day or two, and it will clear. Filter it before using it again. The soda (fixing) bath should not be used more than two or three times. Where prints are only occasionally made, a fresh bath should be made each time of printing. The gold (toning) bath works quicker when warmed to about blood heat; prints will then tone in from two to six minutes. Prints on plain paper will tone quicker than those on the albumenized. If your prints are undertoned they will have a warm brown appearance; if toned too much, a cold steel color. A little experience will soon indicate the precise degree of toning required.

If you do your own printing and toning you must be prepared to have stains on your hands and clothing from the nitrate of silver. They may generally be removed by moistening the spots with tincture of iodine, and then with a saturated solution of hyposulphite of soda. Cyanide of potassium will remove them more quickly; but it is deadly poison, and is not recommended.

I AM asked what is the meaning of the mathematical symbol $\frac{f}{20}$, often used in relation to lenses. It means that the aperture in the stop is one twentieth of the focus of the lens.

THE PERFECT SHUTTER.—Probably there is nothing in the department of photographic mechanics that has developed so much ingenuity as the effort to secure an automatic contrivance which would give satisfactory results for the exposure of plates. I have tried a great many shutters, and always when I had serious work on hand have gone back to some form of the old-fashioned guillotine or drop shutter. The objective point, of course, was not only speed, but the admission of the most light in the brief time the plate was exposed to the view. In the large majority the centre opened and closed again by the passing of two slides in front of the lens, each shutter having an opening and so arranged that the openings would pass the lens at the same instant. Beginning with an aperture the size of a pin's point, it increases to the full size of the stop, and then closes again. With an entire exposure of the one hundredth

of a second, under such circumstances, it would be difficult to compute the fraction of time during which the plate had the benefit of *all* the light; certainly not one thousandth part of a second! Mr. Eastman, of Rochester, I think, has solved the problem in a very simple manner by passing a shutter over and in near contact with the plate. It forms no part and is detached from the lens, and is a simple mechanism of the box of his detective camera. So having adjusted the size of stop and speed at which his shutter is to act, he opens the lens, and at the proper moment passes the shutter, which has an adjustable opening, *before the plate*. This, of course, gives the full opening of the stop during the entire exposure, whatever that may be, and enables one to *time* the exposure with accuracy. For instance, suppose the shutter is five inches wide, and has an aperture half an inch wide, and is one second in passing from side to side. Any intelligent amateur can figure that out.

